

## Description and Rating

### DUPLEX-DIODE PENTODE

#### GENERAL DESCRIPTION

Principal Application: The 14R7 is a duplex diode, semi-remote-cutoff pentode suitable for use as a combined detector, automatic-volume-control rectifier and audio amplifier. The pentode section may

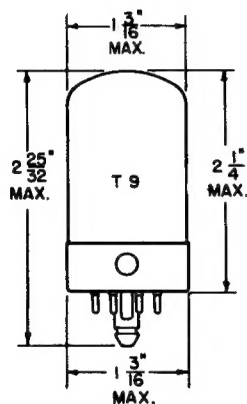
also be used as a radio-frequency or intermediate-frequency amplifier. The tube features low coupling capacitance between the diode units and the pentode section.

Cathode: . . . . . Coated Unipotential  
Heater Voltage (A-C or D-C). . . . . 12.6 Volts  
Heater Current . . . . . 0.15 Ampere  
Envelope: . . . . . T-9 Glass  
Base: . . . . . DB-1, Locking-In 8-Pin  
Mounting Position: . . . . . Any

#### Direct Interelectrode Capacitances:\*

Grid to Plate (Max). . . . .	0.004	μμf
Input . . . . .	5.6	μμf
Output . . . . .	5.3	μμf
Diode 1 Plate to Grid 1 (Max). . .	0.005	μμf
Diode 2 Plate to Grid 1 (Max). . .	0.002	μμf

#### PHYSICAL DIMENSIONS

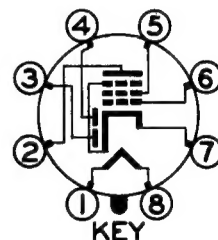


RMA 9-30

#### TERMINAL CONNECTIONS

- Pin 1 - Heater
- Pin 2 - Plate
- Pin 3 - Diode Number 2 Plate
- Pin 4 - Diode Number 1 Plate
- Pin 5 - Grid Number 2 (Screen)
- Pin 6 - Grid Number 1
- Pin 7 - Cathode, Grid Number 3, and internal Shield
- Pin 8 - Heater

#### BASING DIAGRAM



RMA 8AE  
BOTTOM VIEW

#### MAXIMUM RATINGS

##### DESIGN CENTER VALUES:

Plate Voltage . . . . .	250	Volts
Screen Supply Voltage . . . . .	250	Volts
Screen Voltage . . . . .	125	Volts
Positive D-C Grid Number 1 Voltage . . . . .	0	Volts
Plate Dissipation . . . . .	2.0	Watts
Screen Dissipation . . . . .	0.25	Watt
Heater-Cathode Voltage . . . . .	90	Volts
Diode Current for Continuous Operation (Each Diode) . . . . .	1.0	Milliampere

\* With external shield #308 connected to pin 7

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A<sub>1</sub> AMPLIFIER

Plate Voltage . . . . .	100 . . . . .	250 . . . . .	Volts
Screen Voltage . . . . .	100 . . . . .	100 . . . . .	Volts
Grid Number 1 Voltage . . . . .	-1 . . . . .	-1 . . . . .	Volt
Plate Resistance (Approx) . . . . .	0.35 . . . . .	1.0 . . . . .	Megohm
Transconductance . . . . .	3000 . . . . .	3200 . . . . .	Micromhos
Plate Current . . . . .	5.5 . . . . .	5.7 . . . . .	Milliamperes
Screen Current . . . . .	2.2 . . . . .	2.1 . . . . .	Milliamperes
Grid Number 1 Voltage (Approx) for $G_m = 10$ Micromhos . . . . .	-20 . . . . .	-20 . . . . .	Volts
Average Diode Current: (Each Diode)			
Measured with 10 Volts D-C Applied . . . . .	2.0 . . . . .	Milliamperes	

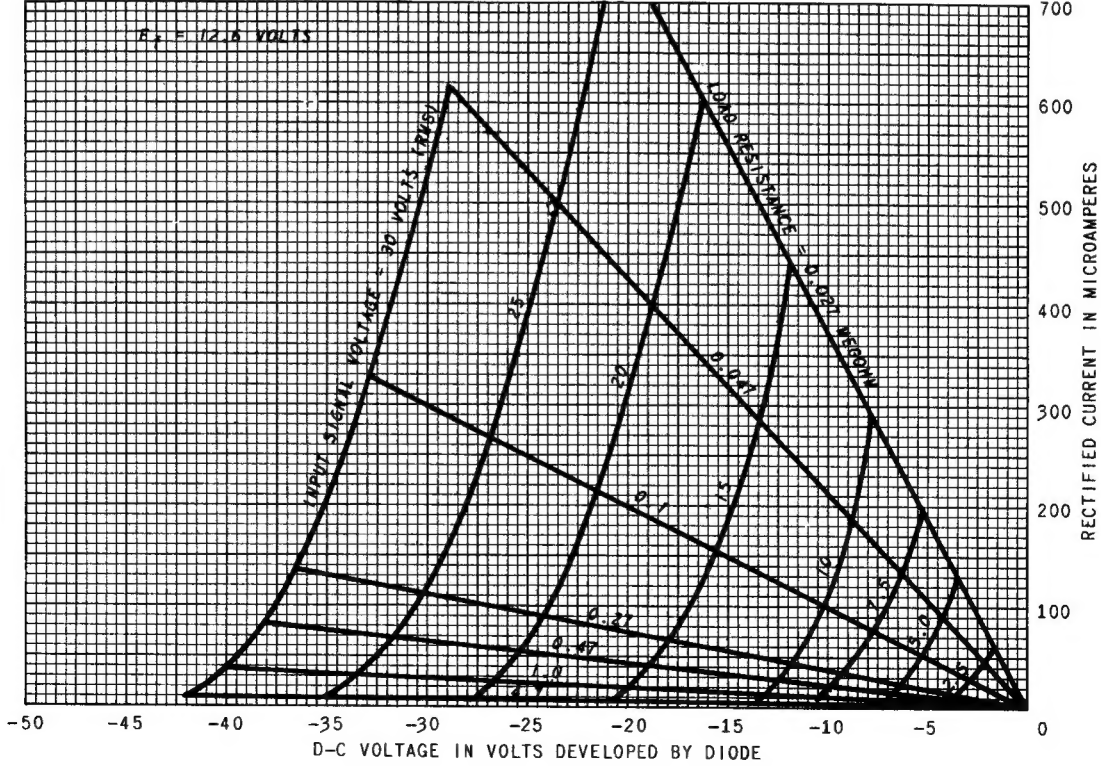
CLASS A RESISTANCE-COUPLED AMPLIFIER

Rp Meg.	Rs Meg.	Rg1 Meg.	Ebb = 90 Volts				Ebb = 180 Volts				Ebb = 300 Volts			
			Rk	Rsg	Gain	Eo	Rk	Rsg	Gain	Eo	Rk	Rsg	Gain	Eo
0.10	0.10	*	900	0.22	39	9.2	540	0.28	59	18	360	0.38	80	31
0.10	0.24	*	970	0.24	52	12	570	0.32	84	25	400	0.44	112	42
0.24	0.24	*	2000	0.69	57	8.7	1100	0.79	85	18	760	1.00	125	28
0.24	0.51	*	2200	0.76	73	11	1200	1.00	119	21	1200	1.10	158	36
0.51	0.51	*	4200	1.60	73	7.0	2300	1.80	105	17	1600	1.90	150	28
0.51	1.0	*	4600	1.80	88	9.6	2400	2.00	141	19	1600	2.10	192	33
0.24	0.24	10	0	0.64	57	8.5	0	0.74	91	18	0	0.88	131	30
0.24	0.51	10	0	0.71	73	11	0	0.82	125	23	0	0.96	177	38
0.51	0.51	10	0	1.60	68	7.8	0	1.70	114	16	0	1.90	166	28
0.51	1.0	10	0	1.70	87	9.6	0	2.00	152	19	0	2.20	216	33

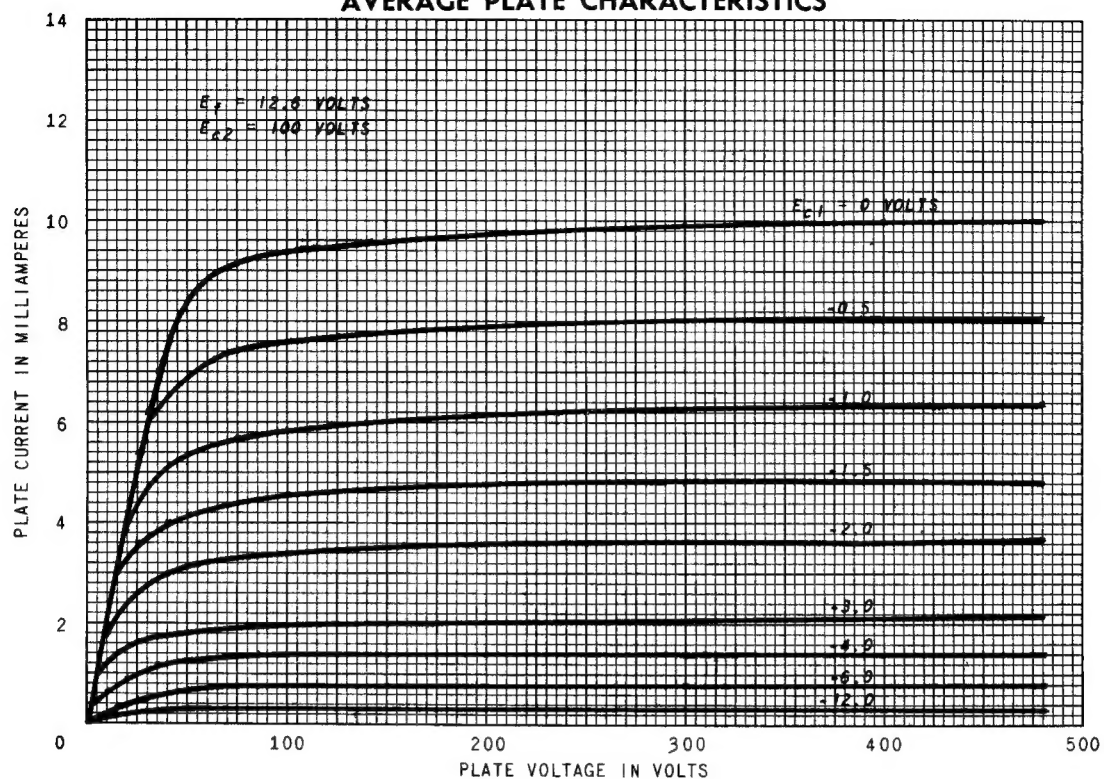
Note: Coupling capacitors (C) should be adjusted to give desired frequency response. Rk and Rsg should be adequately by-passed.

Notes: 1. Eo is maximum RMS voltage output for five percent (5%) total harmonic distortion. 2. Gain measured at 2.0 volts RMS output. 3. For zero-bias data, generator impedance is negligible. \* Value of Rg1 is non-critical.

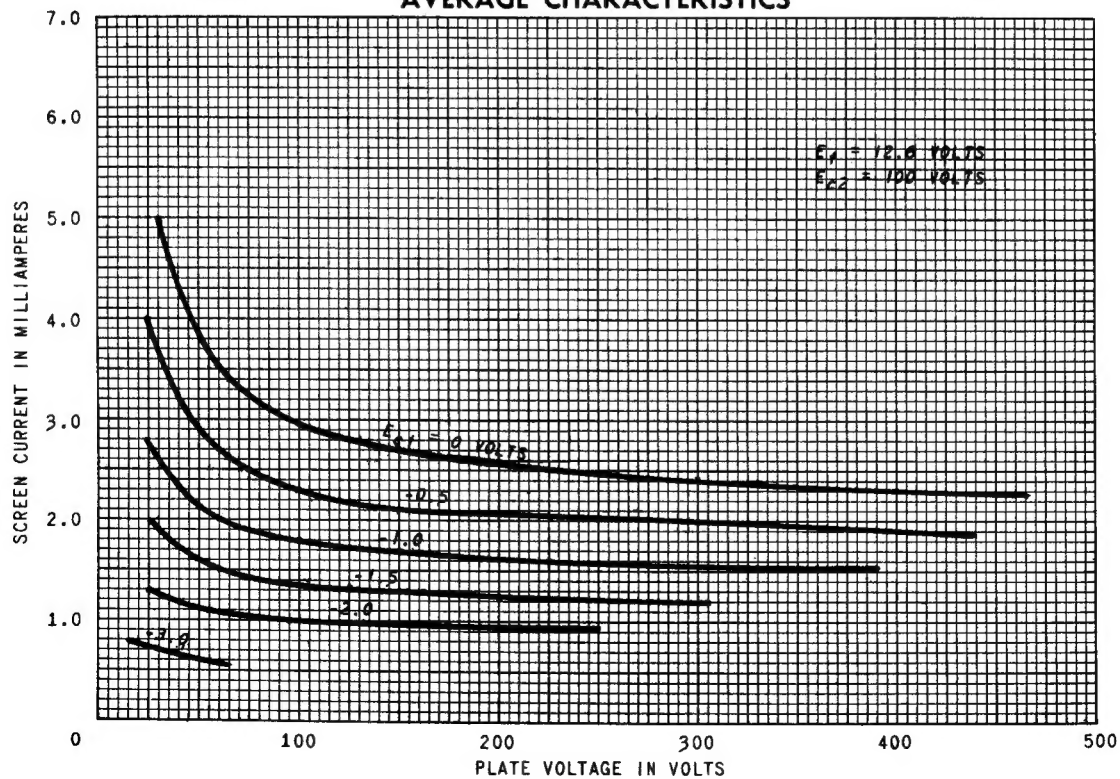
OPERATION CHARACTERISTICS  
EACH DIODE SECTION

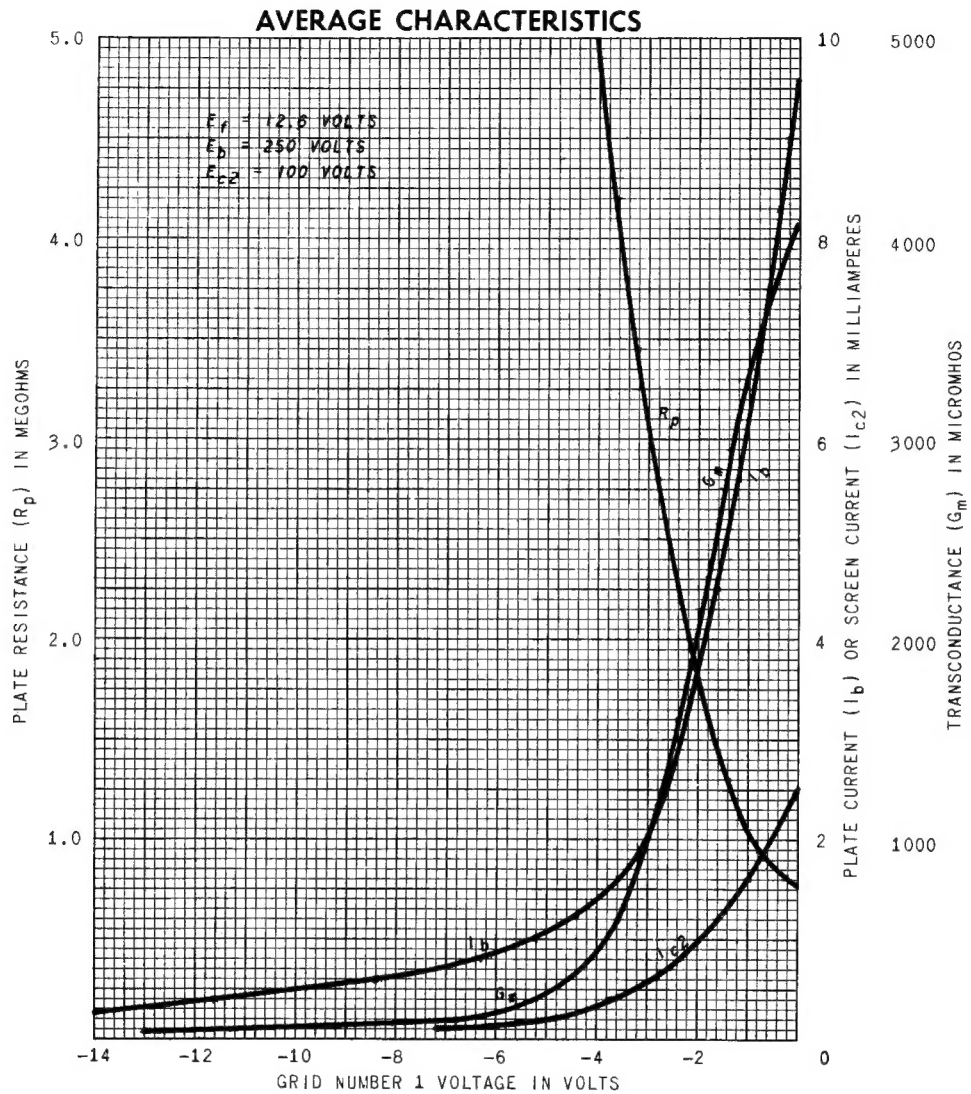


## AVERAGE PLATE CHARACTERISTICS



## AVERAGE CHARACTERISTICS





Tube Divisions, Electronics Department

**GENERAL ELECTRIC**

Schenectady, N. Y.